REMARKS

Claims 2, 3, 6-19 and 21 are pending in the present application with claims 8-16 withdrawn. With entry of this Amendment, Applicants amend claims 17 and 21. Reexamination and reconsideration are respectfully requested.

Claim 17 is directed to a method of processing a surface of a substrate to be processed. The method comprises an etching process, a rinsing process, a hydrophilic process and a drying process. The hydrophilic process supplies ozone water having a concentration ranging from 0.5 to 10 PPM to form an oxidation film having a thickness ranging from 6 to 10 Å on the surface of the substrate. This hydrophilic process prevents watermarks from forming on the surface of the substrate without dissolving resist. Claims 17 and 21 has been amended to be placed in better form.

The Examiner rejected claims 17-19 and 21 under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Konuma (US 6127279). This rejection is respectfully traversed.

Applicants respectfully submit that the admitted prior art and Konuma do not disclose "a hydrophilic process to supply the substrate with an ozone water having a concentration ranging from 0.5 to 10 PPM, thereby to form an oxidation film having a thickness ranging from 6 to 10 Å on the surface of the substrate for providing hydrophilicity therefor" as recited in claim 17 and as similarly recited in claim 21. Nor is there any motivation to combine the admitted prior art with Konuma.

The admitted prior art does not disclose an ozone water concentration 0.5 to 10 PPM to form an oxidation film having a thickness ranging from 6 to 10 Å and, thus, fails to disclose the recited hydrophilic process. The Examiner cites Konuma at Col. 5, lines 30-33 and Col. 2, lines 16-22 to disclose using ozone water having a concentration range of 0.1 to 20 PPM to obtain a hydrophilic surface. Col. 5, lines 30-33 discloses that the ozone water is used to increase wetting on the resist. The ozone water's contact with the resist reduces the contact angle between the etching solution and the resist. The reduced contact angle provides for uniform etching during spin etching.

(see Col. 5, lines 33-61 and Col. 11, lines 19-30). Thus, the cited concentration range for ozone water in Konuma is to increase wetting on the resist.

In contrast, claim 17 recites a hydrophilic process using a specified concentration range of ozone to create an oxidation film "on the surface on the *substrate*" (emphasis added). Konuma, thus, fails to disclose the recited hydrophilic process. Moreover, the concentration of ozone water for increasing wetting on a resist is not relevant to the appropriate concentration for creating a hydrophilic surface on the substrate without dissolving the resist. The Office Action fails to show how the concentration range of ozone water for increasing wetting on a resist is applicable to creating a hydrophilic surface on the substrate. The absence of such a showing undermines the Examiner's motivation to combine the admitted prior art with Konuma.

The Examiner's other cited section – Col. 2, lines 16-22 – further undermines the Examiner's motivation to combine. Col. 2, lines 16-22 discloses forming a thin oxide film on the surface of an amorphous silicon film. The oxide film improves wetting for a subsequent metal element solution. The cited section does not disclose an ozone water concentration range or, for that matter, how the oxide film is even formed. It appears that the Examiner has cited this section for the proposition of forming an oxide film on a silicon film to increase wetting. But the cited section clearly indicates that this approach is not favored: "this increases the number of process steps to form the device." Thus, the cited section actually teaches away from forming an oxide film on a silicon film and, instead, points to improving wetting on the resist.

Furthermore, Konuma uses the ozone water prior to etching while the present invention uses ozone water within a specified range to prevent watermarks on the surface of the substrate without dissolving the resist. The Examiner contends that Konuma is not being cited for establishing method steps. This aspect of Konuma is nevertheless relevant. Because the ozone water is being used for a different purpose in Konuma than the present invention, it further undercuts the applicability of the ozone water concentration in Konuma to the hydrophilic process on the substrate surface.

Finally, the Examiner assumes that the thickness of the oxidation film in Konuma would be 6-10 Å, because the ozone water concentration of Konuma and the present invention overlap. However, as discussed above, the ozone water in Konuma is used on a different object (i.e., a resist) for a different purpose (i.e., to promote etching). The Examiner has failed to show how it can be assumed that the oxidation film thickness is the same between Konuma and the present invention. Accordingly, Konuma fails to dislcose the recited hydrophilic process that produces an oxidation film of 6 to 10 Å on the substrate surface.

Therefore, Applicants respectfully submit that claims 17 and 21 are patentable in view of the admitted prior art and Konuma for at least the reasons discussed above. The Examiner rejected claims 18 and 19, which depend from claim 17, based on the admitted prior art, Konuma and certain official notices. Applicants traverse these rejections (including the official notices) and respectfully submit that claims 18 and 19 recite the hydrophilic process of claim 17 and are accordingly patentable for at least the reasons above.

The Examiner also rejected claims 17-19 and 21 under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art. As discussed above, the admitted prior art does not disclose an ozone water concentration ranging from 0.5 to 10 PPM to form an oxidation film having a thickness ranging from 6 to 10 Å. The Examiner contends it would have been obvious to use ozone water having a lower concentration based on the admitted prior art and what is well known in the art. Applicants respectfully traverse the Examiner's characterization of the admitted prior art and what is well-known in the art. The present application only explains that it was known to use ozone water to form an oxidation film. There is no explanation that it was well-known that high ozone water concentrations dissolved resist. Accordingly, Applicants respectfully submit that claims 17, its dependent claims and claim 21 are patentable in view of the admitted prior art.

Claims 2, 3, 6 and 7 were rejected under § 103(a) as being unpatentable over the admitted prior art in view of Kamikawa et al. (US 6119367) and, alternatively, over the admitted prior art in view of Konuma and Kamikawa. The rejection is respectfully traversed.

Claims 2, 3, 6 and 7 depend on claim 17 or claim 21 and, thus, recite the hydrophilic process of claims 17 or 21. Applicants respectfully submit that Kamikawa does not disclose the recited hydrophilic process, which the Examiner has not challenged. As a result, claims 2, 3, 6 and 7 are patentable over the admitted prior art, Konuma and Kamikawa, because none of the references discloses the recited hydrophilic process (see MPEP 2143.03).

Finally, Applicants are submitting herewith an Information Disclosure Statement with a Japanese publication (260328/1997) and a corresponding translated abstract. Fig. 1 discloses an oxidation film thickness between 12 to 14 Å and, thus, fails to disclose the hydrophilic process recited in claims 17 and 21 and their respective dependent claims.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue.

If, for any reason, the Examiner finds the application other than in condition for allowance, Applicants request that the Examiner contact the undersigned attorney at the Los Angeles telephone number (213) 892-5630 to discuss any steps necessary to place the application in condition for allowance.

In the unlikely event that the transmittal letter is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicants petition for any required relief including extensions of time and authorize the Commissioner to charge the cost of

such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing docket no. 199372003600.

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Respectfully submitted,

By _____

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